WHAT IS CLAIMED IS:

1. A high-speed WPAN (Wireless Personal Area Network) system, comprising:

an optical fiber serving as a medium for transmitting data;

a plurality of pico-nets each including a plurality of devices and a PNC (Pico-Net Coordinator) device for managing the devices;

a plurality of two-way signal converters that correspond to the pico-nets, each of the two-way signal converters being adapted for converting an optical signal received from the optical fiber into an electrical signal and transmit the electrical signal to the pico-nets, and for converting an electrical signal received from each of the pico-nets into an optical signal to transmit the optical signal to the optical fiber; and

a plurality of connectors attached to both the optical fiber and the two-way signal converters for transmitting signals input from the optical fiber and the signal converters bidirectionally,

wherein one of the PNC devices provided in the plurality of pico-nets allocates and manages timeslots for all of the devices located in the plurality of pico-nets.

2. The high-speed WPAN system as set forth in claim 1, wherein each one of the plurality of connectors comprises:

a first coupler connected to one side of the optical fiber;

a second coupler connected to the other side of the optical fiber; and

a third coupler connected to the signal converter,

wherein the first, second and third couplers are adapted to drop/add input signals.

3. The high-speed WPAN system as set forth in claim 2, wherein each of the first, second and third couplers comprises:

a first port at one side thereof; and

a second port at the other side thereof,

wherein each of the first, second and third couplers drops and transmits a signal input from the first port to the second port, and adds and transmits signals input from the second port to the first port.

4. The high-speed WPAN system as set forth in claim 3, wherein the first port of the first and second couplers are connected to the optical fiber, and the first port of the third coupler is connected to the signal converter.

5. The high-speed WPAN system as set forth in claim 4, wherein the second port at each of the first, second and third couplers are mutually connected to second ports of neighboring couplers by common lines.

6. The high-speed WPAN system as set forth in claim 1, wherein the one PNC device designated to manage controls all the devices located in the plurality of pico-nets

as a single logical pico-net.

7. The high-speed WPAN system as set forth in claim 6, wherein a higher-order device of PNC-capable devices is set as a PNC device when a location of the one PNC device that manages all the devices located in the plurality of pico-nets is arranged outside the single logical pico-net.

8. A high-speed WPAN (Wireless Personal Area Network) system, comprising:

an optical fiber serving as a medium for transmitting data;

a pico-net including at least one device and a PNC (Pico-Net Coordinator) device for managing the at least one device;

a two-way signal converter adapted for converting an optical signal received from the optical fiber into an electrical signal to transmit the electrical signal to the pico-net, and for converting an electrical signal received from the pico-net into an optical signal for transmission the optical fiber; and

a connector connected to the optical fiber and the two-way signal converter for transmitting signals inputted from the optical fiber and the signal converters bidirectionally,

wherein the PNC device provided in the pico-net allocates and manages timeslots for all the other devices located in other pico-nets that are attached to said pico-net and the optical fiber by the connector.

9. A method for providing communications in a high-speed WPAN (Wireless Personal Area Network) system, comprising the steps of :

(a) designating an optical fiber serving as a medium for transmitting data;

(b) arranging a plurality of pico-nets each including a plurality of devices and a PNC (Pico-Net Coordinator) device in communication with the optical fiber medium for managing the devices;

(c) providing a plurality of two-way signal converters that correspond to each one of the pico-nets, each of the two-way signal converters being adapted for converting an optical signal received from the optical fiber into an electrical signal and transmit the electrical signal to the pico-nets, and for converting an electrical signal received from each of the pico-nets into an optical signal to transmit the optical signal to the optical fiber; and

(d) attaching a plurality of connectors to both the optical fiber and the two-way signal converters for transmitting signals input from the optical fiber and the signal converters bidirectionally, and

(e) designating one of the PNC devices provided in the plurality of pico-nets to allocate and manage timeslots for at least some of the devices located in the plurality of pico-nets.

10. The method according to claim 9, wherein in step (e) the designated PNC device allocates and manages timeslots for all of the devices located in the plurality of

pico-nets.

11. A method for providing high-speed communications in a WPAN (Wireless Personal Area Network) system, comprising the steps of:

(a) designating an optical fiber serving as a medium for transmitting data;

(b) arranging a pico-net including at least one device and a PNC (Pico-Net Coordinator) device for managing the at least one device;

(c) providing a two-way signal converter adapted for converting an optical signal received from the optical fiber into an electrical signal to transmit the electrical signal to the pico-net, and for converting an electrical signal received from the pico-net into an optical signal for transmission the optical fiber; and

(d) attaching a connector to the optical fiber and the two-way signal converter for transmitting signals inputted from the optical fiber and the signal converters bidirectionally,

wherein the PNC device provided in the pico-net allocates and manages timeslots for all the other devices located in other pico-nets that are attached to said pico-net and the optical fiber by the connector.